

What is claimed is :

1. A resilient hinge for spectacle frame, including an axis as well as a positioning guide, a resilient medium and a stopper, which are fitted over the axis in the aforesaid order, the head end of said axis is provided a male hinge structure connected to a female hinge assembled in the spectacle frame, wherein the middle part of the axis is a pillar having a comparatively smaller cross-sectional area with at least one side being a flat surface, the rear portion of said axis is a pillar with the smallest cross-sectional area; said positioning guide is provided with a positioning hole corresponding to the middle pillar of the axis , said positioning guide is fitted over the middle pillar of the axis through the positioning hole and abuts against the male hinge structure of the head end of the axis and the female hinge on the spectacle frame; said resilient medium and stopper are fitted over the rear pillar of the axis in the aforesaid order; the middle and rear pillars of said axis together with the positioning guide, resilient medium and stopper are all sealingly assembled in an accommodating of the spectacle frame.

2. The resilient hinge of the spectacle frame according to claim 1, wherein the rear pillar of said axis is cylindrical, which is manufactured through pressing and stretching by diameter-reducing machine.

3. The resilient hinge of the spectacle frame according to claim 1, wherein the middle pillar of said axis is a pillar with a polygonal cross section.

4. The resilient hinge of the spectacle frame according to claim 3, wherein the middle pillar of said axis is a pillar with a 8-sided polygonal cross section.

5. The resilient hinge of the spectacle frame according to claim 4, wherein the cross sections of the middle pillar of said axis and the positioning hole in positioning guide are square or rectangular.

6. The resilient hinge of the spectacle frame according to claim 1, wherein the cross sections of the middle pillar of said axis and the positioning hole in positioning guide are in the shape of kidney or crisscross or semi-circle.

7. The resilient hinge of the spectacle frame according to claim 1, wherein on a lateral side of the outer surface of said positioning guide is provided with a positioning hole or positioning neck slot.

8. The resilient hinge of the spectacle frame according to claim 7, wherein the female hinge is provided on the spectacle frame front; the middle and rear pillars of the axis together with the positioning guide, resilient medium and stopper are sealingly assembled in the accommodating receptacle on temple; and at least one depression or screw or pin is made or used in a place on the

temple corresponding to the positioning hole or the positioning neck slot in the positioning guide and as a result the positioning guide is wedged; the male hinge structure of said axis is connected movably to the female hinge assembled in the spectacle frame front.

9. The resilient hinge of the spectacle frame according to claim 7, wherein said female hinge is provided on the temple; the middle and rear pillars of said axis together with the positioning guide, resilient medium and stopper are sealingly assembled in the accommodating receptacle in the spectacle frame front; and at least one depression or screw or pin is made or used in a place on the spectacle frame front corresponding to the positioning hole or the positioning neck slot in the positioning guide and as a result the positioning guide is wedged; the male hinge structure of said axis is connected movably to the female hinge assembled in the temple.

10. The resilient hinge of the spectacle frame according to claim 1, wherein the male hinge structure located at the head end of said axis extends outwardly to form a hook structure; a positioning slot that runs through the hole wall is provided in the outer end of accommodating receptacle in the spectacle frame corresponding to where the hook structure is; the hook structure at the head end of the axis is positioned in the positioning slot with their structural sizes matching with each other.

11. The resilient hinge of the spectacle frame according to claim 1, wherein at the end of the positioning guide close to the male hinge structure of the axis is also provided with a plate.

12. The resilient hinge of the spectacle frame according to claim 11, wherein the male hinge structure located at the head end of said axis extends outwardly to form a hook structure; a positioning slot that runs through the hole wall is provided at the outside end of the receptacle in the spectacle frame corresponding to where the hook structure is, a through slot is provided on the plate corresponding to the hook structure and the positioning slot in the spectacle frame, the hook structure at the head end of the axis is positioned in the positioning slot and the through slot with their structural sizes matching with each other.

13. The resilient hinge of the spectacle frame according to claim 11, wherein the rim of the plate is provided with a guiding chamfer.

14. The resilient hinge of the spectacle frame according to claim 11, wherein the accommodating receptacle in the spectacle frame extends outwardly with an accommodating slot corresponding to the plate, said plate suitably fits in the accommodating slot.

15. The resilient hinge of the spectacle frame according to claim 1, wherein a stopper is securely assembled in the outer end portion of rear pillar of said axis or the outer end portion of the rear pillar

of the axis is directly hammered into a flat shape as a stopper, so that the resilient medium is positioned on the rear pillar of the axis.

16. The resilient hinge of the spectacle frame according to claim 1, wherein said resilient medium is a compression spring.

5 17. A manufacturing method for a resilient hinge of spectacle frame, which comprises at least the following steps:

primary shaping step: the axis having a primary shape manufactured from a metal sheet that the head end of the axis is a male hinge structure, the middle part is a square pillar with a comparatively smaller cross-sectional area and the rear part is a square pillar;

10 diameter-reducing: processing the rear square pillar of the axis having the primary shape into a circular pillar with specified diameter value by compressing and stretching simultaneously;

processing a hinge hole: making a hole at the head end of the axis.

18. The manufacturing method of resilient hinge of spectacle frame according to claim 17, wherein the axis having a primary shape is cut out from a metal sheet in the primary shaping step.

15 19. The manufacturing method of resilient hinge of spectacle frame according to claim 18, wherein the axis having a primary shape is cut out from a metal sheet with an NC EDM wire-cut machine in the primary shaping step.

20. The manufacturing method of resilient hinge of spectacle frame according to claim 19, wherein it also includes a step through which an ordinary metal sheet is manufactured into one that
20 meets the specifications required by an NC EDM wire-cut machine.

21. The manufacturing method of resilient hinge of spectacle frame according to claim 17, wherein it also includes a step of shaping the middle pillar of the axis.

22. The manufacturing method of resilient hinge of spectacle frame according to claim 21, wherein the middle pillar of said axis is shaped by pressing or cutting or by other commonly known
25 shaping method.

23. The manufacturing method of resilient hinge of spectacle frame according to claim 17, wherein in the step of the diameter-reducing, the rear portion of the axis having a primary shape is compressed and stretched into a circular pillar with a specified diameter by using a diameter-reducing machine.

30 24. The manufacturing method of resilient hinge of spectacle frame according to claim 17, wherein said method includes a step in which the unwanted excess portion of the rear circular pillar of

the axis that was produced by the diameter-reducing process can be cut out.

25. The manufacturing method of resilient hinge of spectacle frame according to claim 17, wherein a hinge hole in the male hinge structure of the head of the axis is drilled out, punched or milled by a drilling machine, punching machine or milling machine in the hinge hole processing step.

5 26. The manufacturing method of resilient hinge of spectacle frame according to claim 17, wherein the axis is manufactured from materials like titanium, titanium alloy, copper, copper alloy, stainless steel, or other metallic materials like iron or ferroalloy, etc.

10 27. The manufacturing method of resilient hinge of spectacle frame according to claim 17, wherein it also includes a step of fitting the positioning guide, resilient medium and stopper over the middle pillar through to the rear pillar in same order and fixing their positions.